EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Lastova on 04/07/2010.

Amend the below listed claims as follows:

56. (currently amended) A resource allocation method in a communications system having resources, said method comprising:

a network node dividing said resources into at least a first resource class having a first associated characteristic allocation time and a second resource class having a second associated characteristic allocation time that is longer than said first associated characteristic allocation time based on respective associated characteristic allocation times of said resources, where a resource of said first resource class is allocable with an allocation procedure of a first allocation procedure set , said first associated characteristic allocation time represents a time required for allocating or reallocating a resource of said first resource class, and a resource of said second resource class is allocable with an allocation procedure of a second, different allocation procedure set, and said second associated characteristic allocation time is a time required for allocating or reallocating a resource of said second resource class,

for each resource class of said at least first resource class and said second resource class:

the network node determining a resource utilization measure; and

the network node selecting whether or not to trigger resource allocation based on said

resource utilization measure.

60. (currently amended) The method according to claim 58, wherein said communications system

provides a guaranteed minimum amount of resources of said first resource class to a connected user

equipment, and a resource utilization measure of said first resource class exceeds said first threshold

and a resource utilization measure of said second resource class exceeds said second threshold, said

method comprising:

triggering resource allocation for said second resource class; and

temporarily allocating a first resource amount of said first resource class to said connected

user equipment during progression of said resource allocation for said second resource class, said

first resource amount being smaller than said guaranteed minimum resource amount of resources,

whereby a total resource utilization is temporarily reduced during said progression of said resource

allocation for said second resource class.

61. (currently amended) The method according to claim 60, further comprising reallocating a

second resource amount of said first resource class to said connected user equipment after

completion of said resource allocation for said second resource class, said second resource amount

being equal to or larger said guaranteed minimum resource amount of resources.

63. (currently amended) The method according to claim 56, wherein said resources are radio

resources and said method comprising providing said radio resources to a user equipment connected

to said communications system for enabling utilization of communications services available for

said user equipment.

64.   Canceled.

65. (currently amended) The method according to claim 56, wherein said first allocation procedure

set comprises at least one of:

        restricting available transport format combinations, TFC, for user equipment connected to

said system; and

        performing an Adaptive Multi Rate, AMR, mode switch for said a user equipment,

        and said second allocation procedure set comprises least one of:

        performing a channel switch from a dedicated high bit-rate channel to a dedicated low bit-rate

channel for said user equipment;

        performing a channel switch from a dedicated channel to a common channel for said user

equipment;

        performing a handover from a first radio access network to a second radio access network for

said user equipment;

        performing a handover from a first carrier frequency to a second carrier frequency for said

user equipment; and

        dropping an ongoing call for said user equipment.

71. (currently amended) A resource allocation system provided in a communications system having resources, said resources being divided into at least a first resource class having a first associated characteristic allocation time and a second resource class having a second associated characteristic allocation time that is longer than said first associated characteristic allocation time based on respective associated characteristic allocation times of said resources, where a resource of said first resource class is allocable with an allocation procedure of a first allocation procedure set, said first associated characteristic allocation time represents a time required for allocating or reallocating a resource of said first resource class, ~~and~~ a resource of said second resource class is allocable with an allocation procedure of a second, different allocation procedure set, and said second associated characteristic allocation time is a time required for allocating or reallocating a resource of said second resource class, said resource allocation system comprising:

determination means for determining, for each resource class, a resource utilization measure; and

selectively allocation triggering means for selectively triggering, for each resource class and in dependence of said resource utilization measure, resource allocation according to an allocation procedure available for ~~said~~ a respective resource class.

73. (currently amended) The system according to claim 71, wherein said selectively allocation triggering means comprises:

means for comparing said resource utilization measure with a threshold associated with ~~said~~ a

resource class; and

means for triggering said resource allocation if said resource utilization measure exceeds said

threshold.

75. (currently amended) The system according to claim 74, wherein said communications system

provides a guaranteed minimum amount of resources of said first resource class to a connected user

equipment, and a resource utilization measure of said first resource class exceeds said first threshold

and a resource utilization measure of said second resource class exceeds said corresponding second

threshold, said selectively allocation triggering means is configured for:

triggering of resource allocation for said second resource class; and

temporarily allocation of a first resource amount of said first resource class to ~~said~~ a user equipment

during progression of said resource allocation for said second resource class, said first resource

amount being smaller than said guaranteed minimum ~~resource~~ amount of resources.

76. (currently amended) The system according to claim 75, further comprising means for

reallocating a second resource amount of said first resource class to said user equipment after

completion of said resource allocation for said second resource class, said second resource amount

being equal to or larger said guaranteed minimum ~~resource~~ amount of resources.

85. (currently amended) Communications system having resources, said system comprising:

means for dividing said resources into at least a first resource class having a first associated

characteristic allocation time and a second resource class having a second associated characteristic

allocation time that is longer than said first associated characteristic allocation time based on

respective associated characteristic allocation times of said resources, where a resource of said first

resource class is allocable with an allocation procedure of a first allocation procedure set, said first

associated characteristic allocation time represents a time required for allocating or reallocating a

resource of said first resource class, ~~and~~ a resource of said second resource class is allocable with

an allocation procedure of a second, different allocation procedure set, and said second associated

characteristic allocation time is a time required for allocating or reallocating a resource of said

second resource class, ~~;~~ and

    resource allocation means for performing, for each resource class:

        determination of a resource utilization measure; and

        selectively triggering of resource allocation according to an allocation procedure

available for said resource class, in dependence of ~~said~~ a respective resource utilization measure.

91. (previously presented) The system according to claim 85, wherein said determination means is

configured for estimating a total power of communications links used for ~~said~~ a resource class.

92. (currently amended) The system according to claim 85, wherein said resources are radio

resources and said communication system comprises means for providing said radio resources to

user equipment connected to said <u>communication</u> system for enabling utilization of communications

services available for said user equipment.

93. (currently amended) A resource allocation method in a communications system, said method

comprising:

  providing a guaranteed minimum amount of resources of a first resource class and resources

of a second resource class, a characteristic allocation time of said first resource class being shorter

than a corresponding characteristic allocation time of said second resource class <u>and a characteristic</u>

<u>allocation time of a resource class represents a time required for allocating or reallocating a resource</u>

<u>of a respective one of said first and second resource classes;</u>

  triggering resource allocation for said second resource class using an allocation procedure of a

second allocation procedure set; and

  <u>a network node</u> temporarily allocating a first resource amount of said first resource class using

an allocation procedure of a first, different allocation procedure set during progression of said

resource allocation for said second resource class, said first resource amount being smaller than said

guaranteed minimum ~~resource~~ amount <u>of resources,</u>

  whereby a total resource utilization is temporarily reduced during ~~said~~ <u>a</u> progression of said

resource allocation for said second resource class.

94. (currently amended) The method according to claim 93, further comprising reallocating a

second resource amount of said first resource class after completion of said resource allocation for

said second resource class, said second resource amount being equal to or larger said guaranteed

minimum ~~resource~~ amount <u>of resources</u>.

96. (currently amended) The method according to claim ~~93~~ <u>95</u>, wherein triggering resource

allocation comprises:

calculating, for said second resource class, a second resource utilization measure;

comparing said second resource utilization measure with a second threshold associated with

said second resource class; and

triggering resource allocation for said second resource class if said resource utilization

measure exceeds said second threshold.

97. (currently amended) The method according to claim 94, wherein reallocation said second

resource amount comprises:

calculating, for said first resource class, a first resource utilization measure in response to

ending said resource allocation for said second class;

comparing said first resource utilization measure with a ~~third~~ <u>first</u> threshold associated with

said first resource class; and

triggering said reallocation of said second resource amount if said first resource utilization

measure is below said ~~third~~ <u>first</u> threshold.

98. (currently amended) The method according to claim 93, further comprising:

determining a total packet delay for user equipment connected to said communications system

and utilizing resources of said first resource class;

comparing said total packet delay with a delay threshold; and

reallocating a second amount of said first resource class if said total delay exceeds said delay

threshold, said second amount being equal to or larger than said guaranteed minimum ~~resource~~

amount of resources.

99. (currently amended) The method according to claim 93, further comprising:

determining a total packet delay for user equipment connected to said communications system and

utilizing resources of said first resource class;

comparing said total packet delay with a first delay threshold;

comparing a packet delay introduced by ~~said~~ the temporarily resource allocation with a

second delay threshold if said total delay exceeds said first delay threshold; and

reallocating a second resource amount of said first resource class if said delay introduced by

said temporarily resource allocation exceeds said second delay threshold, said second resource

amount being equal to or larger than said guaranteed minimum ~~resource~~ amount of resources.

101. (currently amended) The method according to claim 94, wherein temporarily allocating said

first resource amount comprises temporarily reducing allowed bit-rate below a guaranteed minimum

bit-rate by restricting allowed Transport Format Combination, TFC, and reallocating said second

resource amount comprises increasing said allowed bit-rate to at least said guaranteed minimum bit-rate by releasing ~~said~~ the imposed TFC restrictions.

102. (currently amended) A resource allocation system in a communications system providing a guaranteed minimum amount of resources of a first resource class and resources of a second resource class, a characteristic allocation time of said first resource class being shorter than a corresponding characteristic allocation time of said second resource class <u>and a characteristic allocation time of a resource class represents a time required for allocating or reallocating a resource of a respective one of said first and second resource classes,</u> said resource allocation system comprising:

      means for triggering resource allocation for said second resource class using an allocation procedure of a second allocation procedure set; and

      means for temporarily allocating a first resource amount of said first resource class using an allocation procedure of a first, different allocation procedure set during progression of said resource allocation for said second resource class, said first resource amount being smaller than said guaranteed minimum ~~resource~~ amount <u>of resources,</u>

      whereby a total resource utilization is temporarily reduced during said progression of said resource allocation for said second resource class.

103. (currently amended) The system according to claim 102, further comprising means for

reallocating a second resource amount of said first resource class after completion of said resource

allocation for said second resource class, said second resource amount being equal to or larger said

guaranteed minimum ~~resource~~ amount of resources.

104. (currently amended) The system according to claim 102, wherein said means for temporarily

allocating ~~means~~ comprises:

      means for calculating, for said first resource class, a first resource utilization measure;

      means for comparing said first resource utilization measure with a first threshold associated

with said first resource class; and

      means for triggering said temporary resource allocation if said first resource utilization

measure exceeds said first threshold.

105. (currently amended) The system according to claim ~~102~~ 104, wherein said means for triggering

~~means~~ comprises:

      means for calculating, for said second resource class, a second resource utilization measure;

      means comparing said second resource utilization measure with a second threshold associated

with said second resource class; and

      means for triggering resource allocation for said second resource class if said resource

utilization measure exceeds said second threshold.

106. (currently amended) The system according to claim 105, wherein said <u>means for</u> reallocating ~~means~~ comprises:

means for calculating, for said first resource class, a first resource utilization measure in response to ending said resource allocation for said second class;

means for comparing said first resource utilization measure with a ~~third~~ <u>first</u> threshold associated with said first resource class; and

means for triggering said reallocation of said second resource amount if said first resource utilization measure is below said ~~third~~ <u>first</u> threshold.

107. (currently amended) The system according to claim 102, further comprising:

means for determining a total packet delay for user equipment connected to said communications system and utilizing resources of said first resource class;

means for comparing said total packet delay with a delay threshold; and

means for reallocating a second resource amount of said first resource class if said total delay exceeds said delay threshold, said second resource amount being equal to or larger than said guaranteed minimum amount of resources.

108. (currently amended) The method according to claim 102, further comprising:

means for determining a total packet delay for user equipment connected to said

communications system and utilizing resources of said first resource class;

means for comparing said total packet delay with a first delay threshold;

means for comparing a packet delay introduced by said temporarily resource allocation with a

second delay threshold if said total delay exceeds said first delay threshold; and

means for reallocating a second resource amount of said first resource class if said delay

introduced by said temporarily resource allocation exceeds said second delay threshold, said second

resource amount being equal to or larger than said guaranteed minimum ~~resource~~ amount <u>of</u>

<u>resources</u>.

110. (previously presented) The system according to claim 103, wherein said <u>means for</u> temporarily

~~resource~~ allocating ~~means~~ is configured for temporarily reducing allowed bit-rate below a

guaranteed minimum bit-rate by restricting allowed Transport Format Combinations, TFC, and said

<u>means for</u> reallocating ~~means~~ is configured for increasing said allowed bit-rate to at least said

guaranteed minimum bit-rate by releasing ~~said~~ <u>the</u> imposed TFC restrictions.

Reason for Allowance

For claim 56, and similarly 71, 85, 93, 102, the closest prior art Jurkevich et al (US

5,282,207) where resources are divided into multiple different classes based on an

allocation time, where utilization is measured and an allocation is trigger is based on the

measurement.

Similarly, the second closest prior art Lan et al (US 2004/02145852) discloses where

resources are divided into multiple different classes based on an allocation time, where

utilization is measured and an allocation is trigger is based on the measurement.

However, the prior art does not disclose by anticipation nor combination the feature that

resources are divided into two classes, where both classes have a different allocation

time for allocation a resource of the respective class (one allocation time being longer

than the other one), and where for each class a allocation trigger is based on its

monitored resource utilization. These criticalities are emphasized below:

For claims 56, and similarly 71 and 78, **dividing said resources into at least a first resource**

class having a first associated characteristic allocation time and a second resource class having

a second associated characteristic allocation time that is longer than said first associated

characteristic allocation time based on respective associated characteristic allocation times of said

resources, where a resource of said first resource class is allocable with an allocation procedure of a

first allocation procedure set **, said first associated characteristic allocation time represents a**

time required for allocating or reallocating a resource of said first resource class, a resource of

said second resource class is allocable with an allocation procedure of a second, different allocation

procedure set, **and said second associated characteristic allocation time is a time required for**

allocating or reallocating a resource of said second resource class,

for **each resource class of said at least first resource class and said second resource class**:

       the network node determining a resource utilization measure; and

the network node selecting whether or not to trigger resource allocation based on said resource utilization measure.

For claim 93 and similarly 102, providing a **guaranteed minimum amount of resources of a first resource class and resources of a second resource class, a characteristic allocation time of said first resource class being shorter than a corresponding characteristic allocation time of said second resource class and a characteristic allocation time of a resource class represents a time required for allocating or reallocating a resource of a respective one of said first and second resource classes;**

triggering resource allocation for said second resource class using an allocation procedure of a second allocation procedure set; and

a network node temporarily allocating a first resource amount of said first resource class using an allocation procedure of a first, different allocation procedure set during progression of said resource allocation for said second resource class, said first resource amount being smaller than said guaranteed minimum ~~resource~~ amount of resources,

whereby a total resource utilization is temporarily reduced during ~~said~~ a progression of said resource allocation for said second resource class.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to KENAN CEHIC whose telephone number is (571)270-

3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, KWANG BIN YAO can be reached on (571) 272-3182. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

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